ROOT AND CROP RESIDUES IN THE SOIL WITH FORAGE CROPS

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ABSTRACT:

When using the land during the year, sowing soybeans for grain after fourcomponent (triticale + rapeseed + green peas + oil radish) winter catch crops, the number of feed units was 13380, the amount and quality of protein increased, the bulk soil mass decreased by 0.05-0, 03 g cm3, and the water permeability increased by 20.9 mm / h. When sowing soybeans after one type of food crops in 0-30 cm soil layer, the humus content increased from 1.103% to 1.116%, and when sowing soybeans after four types of catch crops it increased from 1.145% to 1.165%, the total amount of nitrogen from 0.121% to 0.141%, the humus content after four types of soybean catch crops increased by 0.042-0.049%, and the amount of nitrogen by 0.020%.

KEYWORDS: fertility; crop rotation; mustard; barley; triticale; rape; Vika; green peas; oil radish; corn; soy; feed unit.

INTRODUCTION:

Intensification of agriculture with intermediate crops is achieved in two ways: by selecting crops and breeding varieties with a long growing season, with high productivity, or with a short-term formation of two harvests per year or three harvests per year with the current level of scientific knowledge and technical equipment of agriculture, it is possible with the help of crops catch crops, allowing for tighter rotations in early spring and after the main crops have been harvested.

Intermediate crops leave behind 5-6 tons of root and crop residues, contribute to the greatest accumulation of bolls on cotton (9.3 pieces), and increase the yield of raw cotton to 33.2 c / ha. The yield increase compared to the control was 2.5 c / ha. (1)

For annual crops, the most effective means of enriching the soil with organic matter is corn, which leaves 70-84 centners / ha of roots in a 50 cm layer. Grain crops accumulate less root mass, winter crops - 39-41, spring crops 18-19 c / ha. All of them in the intermediate stages serve as a large reserve of soil enrichment with organic matter. (3)

It was found that annual forage crops, leaving organic matter of root and crop residues in the soil, contribute to an increase in soil fertility and an increase in cotton yield (2)

The objective of the experiment was to determine the increase in the productivity of the forage field, cotton crop rotation by maximizing the compaction of crops (from one crop to four) and in the stubble sowing of soybeans for grain in order to increase the yield of forage and simultaneously improve its quality.

The studies were carried out on light gray earth soils of the Andijan region, on the territory of the Andijan branch (UzNIHI), the area of the experimental site is 2 hectares. The total area of the plot is 240 m2, the counting area is 120 m2. The arrangement of the plots is single-tier. The variants are repeated four times.

An increase in the yield and an improvement in its quality with clean crops (mustard and barley) was supposed to be achieved by compaction of crops with double (triticale + rapeseed), triple (triticale + rapeseed + vetch), quadruple (triticale + rapeseed + vetch + peas) and (triticale + rapeseed + peas + oil radish) mixtures.

The accumulation of organic residues in the soil is one of the main factors for increasing its fertility and, first of all, for improving the agrophysical properties of the soil. Different forage crops and their combinations accumulate different amounts of root and crop residues in the soil.

In the experiment we have studied a different combination of forage crops in order to obtain two harvests per year. Annual forage crops were cultivated in pure and mixed crops, which show a clear pattern in the increase in the root mass in the soil during the compaction of crops. A chamber in a clean sowing accumulates in the 0-50 cm soil layer, on average, over three years, 26.5 centners per hectare, and barley - 35.2 centners per hectare of crop and root residues. With a double mixture of forage crops, root and crop residues were 24.4-15.7 centners / ha more than with pure crops of mustard and barley. As a result of the cultivation of triple and quadruple mixtures of forage crops, the accumulation of stubble and root residues from 63.3 to 67.9 c / ha is provided.

In clean sowing, soybeans (var-2) accumulate root and crop residues up to 36.7 c / ha. Cultivation of winter triticale + rapeseed + vetch + green peas and winter triticale + rapeseed + green peas + oil radish and in the stubble planting of soybeans for grain (version 7-8), provide a greater accumulation of stubble and root residues by 16.9-18, 4 kg / ha more in comparison with the combination of corn for grain (version 1) and 63.8-65.3 kg / ha more in comparison with the combination of soybeans for grain (version 2).

With an increase in the competence of food crops, the stubble and root residues increase with the overlapping of soybean residues sown after them. In experiments, a relatively large amount of residues was observed in the 8th variant with sowing triticale + rapeseed + green peas + oil radish as food crops and soybeans for grain, which, respectively, in the experimental fields amounted to 101.4; 106.9 and 108.0 c / ha, these indicators were respectively 2.6 higher; 7.5 and 2.7 c / ha compared to the 7th option when sowing in 4 components (triticale + rapeseed + vetch + green peas).

Experimentally, relatively high indicators of nitrogen content in the soil were obtained in the 8th option under the influence of sowing food crops in mixed four components (triticale + rapeseed + green peas + radish), where the initial amount of total nitrogen in the 0-30 cm soil layer was 0.147%, and after sowing food crops, it decreased and amounted to 0.141% (1989), 0.087-0.083% (1990), 0.108-0.101% (1991), and after soybeans, it accordingly increased 0.160% (1989), 0.109% (1990) and 0.114 % (1991), which was 0.013 higher than the initial indicator; 0.022 and 0.006%.

Due to the stubble and root residues left in the soil after sowing autumn food crops of three or four types (triticale + rapeseed + vetch + radish) in the 0-50 cm soil layer, the amount of stubble and root residues increased by 102.0 centner / ha (in one component per 36.7 c / ha), as a result, the soil fertility increased, its agrophysical and agrochemical properties improved.

NOVATEUR PUBLICATIONS JournalNX- A Multidisciplinary Peer Reviewed Journal ISSN No: 2581 - 4230 VOLUME 7, ISSUE 2, Feb. -2021

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